

# Maximizing Your Irrigation System

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An irrigation system even in its most simple form is a very complex organism. It has taken me years to learn the chain of events that must happen for it to function correctly. Just when you think you have mastered all possible scenarios, you will be humbled at the worst possible time. I would like to share some of my tips and tricks that I have learned over the years in dealing with a system that was installed about the time I was in junior high school.

## *The Pump Station*

Cleanliness is next to godliness. Keep your pump house clean of rodents and insect nests. Mice will crawl into conduit and into your pump controls, so check your panels for nests and set traps. Also, maintain a clean environment that discourages such activities. Sweep the floor and throw out all the old junk lying around. This will also prevent dust and dirt from contaminating station components. If you have a pressure tank, check for proper air pressure before you charge your system with water in the spring. It is possible the rubber bladder inside might be torn and need replacement.

Turn off the power and check your flow switch paddle. Note which posts the wires are connected to and remove them. Next, unthread it from your main line and check the paddle condition if it is still there. Mine was gone when it was inspected this spring! Make sure you select the paddle out of the kit that will not stick on the bottom of the pipe. Rethread in your flow switch with the arrow pointing in the direction of flow, hook up the wires and test it. There is a spring-loaded adjustment screw that may need tuning if the paddle flutters.

Check the condition of your foot valve. Better yet, rebuild it if it has been a while. I personally like to use the leather flapper and gasket replacement. The rubber types are also reliable, but are prone to dry rot during the winter months. Whichever type of replacement you choose, it is a simple job that can save you from losing your prime and your cool.

Another common and often overlooked problem associated with lack of sufficient water flow in your system is garbage clogging up your "Y" strainer. It is a good idea



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to pull it out and check its condition periodically. Also, backwash your strainer at least once a week during periods of heavy use to keep the water flowing unobstructed.

It is also a great investment to have a pump station technician give your pumps and controls a good check-up every couple of years. A good technician will test every switch, valve, electrical component and run a series of tests on your pumps to determine if problems are on the horizon. I found out this past spring that they are willing to share a wealth of expertise and are truly the experts at getting the most out of your pump station.

## *Heads*

One of the simplest tips I can offer for sprinkler heads is to just observe them closely in operation. I took some serious time this past summer checking the time it takes for each one to make a revolution and checking distribution with rain gauges, but just watching them in operation alone told me that I needed to do some work. Years of topdressing greens and tees had substantially lowered the heads to the point where the turf was knocking the spray down and causing poor performance. Purchasing an upgraded internal conversion assembly for my existing heads eliminated most digging up and leveling since the newer sprinklers pop up 2" higher than the older types. I have almost completely replaced

all my old Toro 634s on greens and tees to the newer 834 conversion assemblies. The result was a dramatic improvement in overall turf quality and water delivery.

Check out your nozzles next. I was astounded at how many heads were all broken up from mowers chewing on them over the years. Just replacing the cracked or worn out nozzles, O-rings, covers and other miscellaneous parts restored my old 670's into virtually new condition. Also check to make sure the proper nozzle is used for its application. For instance, I am going to be bold and say that no two heads are spaced the same, there are elevated areas on the golf course, some areas are drier and windier than others, and your course is not a flat blueprint paper, right? Well, chances are good that if you have an older system all the nozzles are probably the same for the type of sprinkler used. Changing the nozzles in your typical problem areas of over/under watering will maximize your water usage and turf condition.

Another good idea is to check the condition of all isolation valves at least once a summer. More times than not, I have had to dig out a few inches of silt just to get to the valve handle. There is also nothing worse than having the valve handle disintegrate in your hand while trying to isolate a problem, so give them a turn to make sure they are operating freely.

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Last but not least, keep your quick couplers uncovered and free of debris. If you are not sure where they all are, use a metal detector. When I first started here at the course, 14 of mine were buried with up to 6" of material and they were not at "X" marks the spot on the irrigation map. Using just a plain quick coupler key, flush out any sand or rocks that may be in the quick coupler so they will not end up clogging a hose end watering device.

### Updating Controllers and Adding Zones

A few years ago, our system took a direct lightning strike and I remember how bummed out I was seeing smoldering plastic and charred steel boxes that were once my old VT12 satellites. Looking back, what a blessing in disguise! We were able to immediately update most of our system to Network LTC that summer. The remaining controllers were replaced the following season after we found out how far behind times we were. The ability to run cycles, turn multiple

heads on at once, syringe and have almost endless programming options is now something I cannot live without. The best part of the whole deal was it was not really an expensive capital purchase especially since we installed them totally with in house labor. Also, having a 64- station controller opened up even more opportunities for adding on to my system.

I started looking into adding zones to my single row system in areas that needed help a few years ago. For example, I was watering my practice green and several tees with hoses run from quick couplers. I would also watch in desperation, as the right side of my second fairway would turn into a desert whenever it went 2 days without rain. To make a long story short, my board of directors said there was no way we could pay for such improvements. After going back to the drawing board, I came back a week later and had a plan to get all the projects done in 2 years at about 1/3 the cost if we used in house labor to do the work. Not only was I able to rally the board, but also quite a few of the members! One of the leagues donated all of the materials and one of the members donated heavy equipment that we needed for the project. I can now laugh thinking

back at all the boulders we dug up, wondering if I really knew what in god's name I was doing, and the moment of truth when I fired up the new zones. Was it a failure? No way. Everything worked like a Swiss watch. I have been able to eliminate many labor hours hand watering and improve turf conditions 100% in those areas. Having a double row down my second fairway completely changed the way the hole plays and my members could not be happier.

Adding zones to your system is not something you need a large staff to do in house. For example, we were able to install 1,200 feet of pipe, wires, heads and have everything cleaned up and sodded back together in one week with two staff members and myself.

In conclusion, taking some serious time to really change the weak links in your irrigation system will have one of the biggest positive impacts on your turf. Adding new zones and changing out the controls was one of my most challenging and rewarding projects that I have taken on. However, just taking an hour a week to make minor improvements to your system will have noticeable results almost immediately.



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